

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A method of re-routing a path in a terrestrial Multiplex Section Shared Protection Ring network in the event of a failure in a span of said path, said ring network comprising network elements connected in a ring configuration through fiber spans, said fiber spans comprising high-priority channels and low-priority channels, said method comprising the step of performing a ring switch action by the MS shared protection mechanism, wherein it further comprises the steps of:

providing said path with a Time Slot Interchange mechanism, thus obtaining a Time Slot Interchange path wherein different high priority time slots are occupied in different path spans;

providing each time slot with an index such that each high priority time slot in a span has a corresponding low priority time slot; and

in the event of span failure, re-routing at least one high priority channel which would have occupied an allocated high priority time slot in the failed span over a selected low priority time slot in an adjacent non-failed span, said selected low priority time slot being selected based on said allocated high priority time slot~~the Time Slot Interchange path over time slot of the low-priority channels corresponding to the time slots of the high-priority channels of the failed~~failed span.

2. (Currently Amended) A method according to claim 1, in which a further span is affected by a failure, wherein the method further comprises the steps of:

selecting one of the two ~~failed~~failed spans; and

~~re-routing the Time-Slot Interchange path over the time slot of the low priority channels~~
~~corresponding to the time slot of the high priority channels of the selected failed span~~using an
allocated high priority time slot of the selected failed span as the allocated time slot on the basis
of which the low priority time slot is selected for re-routing.

3. (Currently Amended) A method according to claim 1, wherein said ring network is a two-fiber network, wherein the index of said selected low priority time slot ~~step of re-routing~~
~~the Time-Slot Interchange path comprises the step of re-routing the path over the low priority~~
~~channels with the index~~ is given by the sum of half the overall number of ~~handled channel~~time
slots and the index of the ~~time slot of the~~allocated high-priority channels ~~allocated~~time slot on
the ~~failed~~failed span.

4. (Currently Amended) A method according to claim 2, wherein said ring network is a two-fiber network, wherein the index of said selected low priority time slot ~~step of re-routing~~
~~the Time-Slot Interchange path comprises the step of re-routing the path over the low priority~~
~~channels with the index~~ is given by the sum of half the overall number of ~~handled channel~~time
slots and the index of the allocated time slot ~~of the high priority channels allocated on the~~
selected ~~failed~~failed span.

5. (Currently Amended) A method according to claim 1, wherein said ring network is a four-fiber network, ~~wherein the step of re-routing the Time-Slot Interchange path comprises the step of re-routing the path over the time slot of low priority channels with index corresponding to the index of the time slot of the high priority channels allocated on the failed~~ span.

6. (Currently Amended) A method according to claim 2, wherein said ring network is a four-fiber network, wherein the step of re-routing the Time-Slot Interchange path comprises the step of re-routing the path over the time slot of a low priority channels with index corresponding to the index of ~~the~~said allocated time slot of ~~the high priority channels allocated~~ on the selected ~~failed~~failed span.

7. (Currently Amended) A method according to claim 2, wherein the step of selecting one of the two ~~failed~~failed spans comprises the steps of:

identifying switching nodes in ~~failed~~the failed path, each node being associated with an identification number; and

selecting the ~~failed~~failed span adjacent to the switching node with higher/lower identification number.

8. (Currently Amended) A method according to claim 2, wherein the step of selecting one of the two ~~failed~~failed spans comprises the steps of:

identifying switching nodes in ~~failed~~the failed path, each node being associated with an identification number;

providing a ring map with node order; and

selecting the ~~failed~~failed span adjacent to the switching node that comes first/last in the ring network map.

9. (Currently Amended) A method according to claim 2, wherein the step of selecting one of the two ~~failed~~failed spans comprises the step of:

identifying switching nodes in ~~failed~~the failed path, each node being associated with an identification number;

identifying East and West sides in the network; and

selecting the ~~failed~~failed span adjacent to the switching node far East or far West in the ring network.

10. (Currently Amended) A method according to claim 2 wherein at least one node has become isolated by the failures and wherein the method comprises the additional steps of:

identifying termination nodes of ~~failed~~the failed path;

subdividing the ring network into a first and second sub-networks, a second sub-network comprising the at least one isolated node, the first sub-network comprising the other nodes of the ring network;

evaluating if both the corresponding termination nodes belong to the first or second sub-networks; and

taking actions for re-routing the ~~failed~~failed path in case the evaluation about termination nodes is positive.

11. (Original) A method according to claim 1, wherein it comprises the additional step of providing all the network elements involved in the Time-Slot Interchange path allocation with information concerning whole path allocation in the ring, namely in which node the Time-Slot Interchange path is dropped, inserted or is made to transit, on which time slot the path in question is allocated and concerning possible concatenations present, distinguishing between East side and West side.

12. (Currently Amended) A network element of a terrestrial Multiplex Section Shared Protection Ring network, said ring network comprising further network elements connected in a ring configuration through fiber spans, said fiber spans comprising high-priority channels and low-priority channels, said network element comprising

means for performing ring switch actions, namely pass-through, bridge or switch actions, upon receipt of corresponding signalings; and

means for generating and sending proper signalings upon receipt of corresponding signalings,

a path being installed in said ring network, wherein said installed path is a path in time slot interchange where different high priority time slots are occupied in different path spans and each high priority time slot has a corresponding low priority time slot, and wherein said network element further comprises means for, in the event of a failure on a span of the installed path, re-

routing the path over ~~the~~ a selected low priority time slot of the low priority channels ~~a non-failed span, the selected low priority time slot being selected based at least in part on an allocated time slot which would have been used on the failed span in the absence of said failure, corresponding to the time slot of the high priority channels of the failed span.~~

13. (Currently Amended) A network element according to claim 12, wherein a further span becomes affected by a failure, wherein ~~it further~~ said means for re-routing comprises:

means for selecting one of the two ~~failed~~ failed spans; and

means for ~~re-routing the failed path on time slot of low priority channels corresponding to time slot of high priority channels of the selected failed span~~ using an allocated high priority time slot of the selected failed span as the allocated time slot on the basis of which the low priority time slot is selected for re-routing.

14. (Currently Amended) A network element according to claim 12, which is part of a two-fiber network, wherein each time slot is associated with an index and wherein the re-routing means comprise means for ~~re-routing the path over the time slot of the low priority channels~~ selecting said selected low priority time slot with index given by the sum of half the overall number of the handled channel time slots and the index of the allocated high priority time slot of the high priority channels allocated on the ~~failed~~ failed span.

15. (Currently Amended) A network element according to claim 13, which is part of a two-fiber network, wherein each time slot is associated with an index and wherein the re-routing

means comprise means for ~~re-routing the path over the time slot of the low priority channels~~ selecting said selected low priority time slot with index given by the sum of half the overall number of the ~~handled channel~~ time slots and the index of time slot of the allocated high-priority channels ~~allocated~~ time slot on the selected ~~failed~~ failed span.

16. (Currently Amended) A network element according to claim 12, in which said ring network is a four-fiber network, wherein each time slot is associated with an index, and further wherein the ~~means for re-routing the path comprise means for re-routing the path over the time slot of the low priority channels with index corresponding to the index of time slot of the high priority channels allocated on the failed span~~ value of the index of said selected low priority time slot bears a predetermined relationship to the index of said allocated high priority time slot.

17. (Currently Amended) A network element according to claim 13, in which said ring network is a four-fiber network, wherein each time slot is associated with an index, and further wherein the ~~means for re-routing the path comprise means for re-routing the path over the time slot of the low priority channels with index corresponding to the index of time slot of the high priority channels allocated on the selected failed span~~ value of the index of said selected low priority time slot bears a predetermined relationship to the index of said allocated high priority time slot.